

1 MULTI-SERVICE SEGMENTATION AND REASSEMBLY DEVICE  
2 THAT MAINTAINS ONLY ONE  
3 REASSEMBLY CONTEXT PER ACTIVE OUTPUT PORT  
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8 ABSTRACT OF THE DISCLOSURE

9 A multi-service segmentation and reassembly (MS-SAR) integrated circuit is  
10 disposed on a line card in a router or switch. The MS-SAR can operate in an  
11 ingress mode so that it receives packet and/or cell format data and forwards that  
12 data to either a packet-based or a cell-based switch fabric. The MS-SAR can also  
13 operate in an egress mode so that it receives data from either a packet-based or a  
14 cell-based switch fabric and outputs that data in packet and/or cell format. The MS-  
15 SAR has a data path through which many flows of different traffic types are  
16 processed simultaneously. Each flow is processed by functional blocks along the  
17 data path in accordance with one of several application types, the application type  
18 for a flow being predetermined by the host processor of the router or switch.  
19 Segmentation, reassembly and partitioning techniques are disclosed that reduce  
20 costs and facilitate high-speed operation.